

Guiding Principles for High-Performance and Sustainable Buildings eTraining Series

Course: FEMP 34
Duration: 1.0 hours
Learning Units: 1.0 LU
Prerequisites: None
HSW: Yes
IACET CEUs: 0.1



Guiding Principle V: Reduce Environmental Impact of Materials

In the course, Guiding Principles for Existing High Performance and Sustainable Buildings, Guiding Principle V, Reduce Environmental Impact of Materials, you will learn strategies for meeting the compliance requirements and recommended evidence of compliance for Guiding Principle V.

The Office of Management and Budget (OMB) uses the Guiding Principles to score federal agencies' progress and compliance within the Green Buildings category on annual agency scorecards.

This course focuses on the following fundamentals to meet and document compliance for high performance and sustainable buildings in a federal facility:

- Recycled Content
- Biobased Content
- Waste and Material Management, and
- Ozone Depleting Compounds.

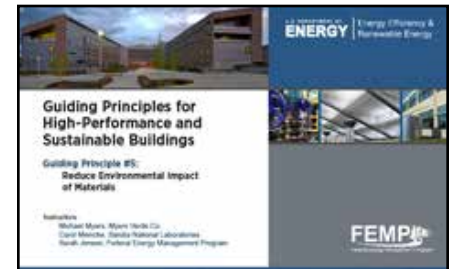
Instructor

The instructor for this course is **Sarah Jensen**, Technical Lead for Sustainability, Federal Energy Management Program. Sarah also co-chairs the Interagency Sustainability Working Group (ISWG) with GSA. She most recently served as deputy director and environmental counsel for the Green the Capitol Office for the U.S. House of Representatives. She received a bachelor's degree in mass communications from James Madison University and a juris doctor degree in energy, environment, and natural resources law from Northwestern School of Law at Lewis and Clark College.

Learning Objectives

By successfully completing this course, you will be able to:

- Identify and implement sustainable operations and maintenance practices in the areas of waste management, low-emitting materials, and biobased materials;
- Assess existing conditions, identify opportunities for improvement, and establish implementation plans and metrics to comply with the Guiding Principles;
- Recognize decision points and opportunities to implement sustainable strategies to achieve integrated, holistic and cost effective materials and waste management improvements; and
- Document meeting the Guiding Principle requirements through conformance with the recommended evidence of compliance.



Guiding Principle V

5.1 Title Slide

Welcome to the FEMP e-Training series on Guiding Principles for Federal Leadership for Existing High Performance and Sustainable Buildings. The course covers Guiding Principle V, Reduce Environmental Impact of Materials.

5.2 Navigation Instructions

Each page of this course contains a navigation bar across the bottom.

The course will not move to the next page automatically, so you will need to use these buttons to move within the course. Click the play button or pause button to play or pause the course.

Click the back button to review the previous page.

Click the forward button to go to the next page.

Click and drag the progress indicator to move the course forward or backward.

Click the audio button to turn the audio on or off.

Click the exit button to close the course window.

Click the arrows in the top left corner of the screen to open or close the table of contents.

Click the “Notes From the Field” icon for more information.

Click the magnifying glass icon for “Recommended Evidence of Compliance” information.

5.3 Guiding Principles Overview

Federal agencies must comply with five Guiding Principles for High Performance and Sustainable Buildings.

1. Employ integrated assessment, operation, and management principles
2. Optimize energy performance
3. Protect and conserve water
4. Enhance indoor environmental quality
5. Reduce environmental impact of materials

Each guiding principle has its associated actions and requirements for compliance. This course will cover Guiding Principle V, Reduce Environmental Impacts of Materials.

5.4 Guiding Principle V: Elements

Guiding Principle V includes actions, requirements, and Recommended Evidence of Compliance in the following areas:

- Recycled Content
- Biobased Content
- Waste and Material Management, and
- Ozone Depleting Compounds.

Welcome to this course. Now, let's get started.

5.5 Comprehensive Sustainable Acquisition Plan

An efficient strategy to meet compliance with Guiding Principle V is to have a comprehensive sustainable acquisition plan. By doing so, you will not only meet this principle, but you can comply with other product purchase requirements that are necessary for other Guiding Principles. A good sustainable acquisition plan will help you meet requirements for

- ENERGY STAR- and FEMP-Designated Products
- WaterSense Products
- Low-Emitting Products
- Recycled Content
- Biobased Content
- Environmentally Preferable Products, and
- Ozone-Depleting Compounds.

5.6 Recycled Content

The first action in this principle is to address recycled content. You need to meet, or exceed, the EPA's recycled content recommendations for building modification, maintenance, and cleaning. You will need to capture and document this information. Agency staff in various departments will need to access and use this information.

Click on the icon for specifications regarding Section 6002 of the Resource Conservation and Recovery Act. The recycled content action of Guiding Principle V is based on this Section.

Icon text: Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 10% (based on cost or weight) of the total value of the materials in the project. If EPA-designated products meet performance requirements and are available at a reasonable cost, a preference for purchasing them shall be included in all solicitation relevant to construction, operation, maintenance of or use in the building.

Click the link at the bottom of the page for the EPA's Comprehensive Procurement Guideline web site.

5.7 Federal Acquisition Regulations

The federal government has already enacted recycled content regulations and requirements for products to be acquired by federal agencies. Click on the Federal Acquisition Regulations sections for more information. Agencies should already be adhering to these regulations.

Federal Acquisition Regulation (FAR) Part 23. Requires agencies to purchase recycled-content products.

FAR 23.403. Requires purchases of competitive, cost-effective products that meet reasonable performance requirements and are composed of the highest percentage of recovered materials practicable.

FAR 23.404. Requires agencies to have an APP that provides guidelines for purchasing items with recycled content.

FAR 23.406. Requires insertion of contract clauses for the following:

- Recovered Material Certification (FAR 52.223-4)
- Estimate of Percentage of Recovered Material Content for EPA-designated products (FAR 52.223-9)
- Affirmative procurement of EPA-designated items in service and construction contracts (FAR 52.223-17).

FAR 23.705. Requires insertion of the Waste Reduction Program clause (FAR 52.223-10) in all solicitations and contracts for contractor operation of government-owned or government-leased facilities and for services at these locations.

5.8 Comprehensive Procurement Guidelines

The EPA has designated products in several different categories to help determine what resources are available to meet recycling requirements. These categories include:

- Construction Products
- Landscaping Products
- Non-paper Office Products
- Paper & Paper Products
- Vehicular Products
- Miscellaneous Products
- Park & Recreation Products
- Transportation Products

These categories go far beyond office products or construction products. Extensive work has been done to incorporate recycled content into products that are used in many areas.

The agency plan must also demonstrate that the information makes its way down to the contract level and service contract level. This is to ensure cohesive execution of the sustainable acquisition plan, and thereby compliance with the recycled content action within Guiding Principle V.

Recommended Evidence of Compliance:

The recommended evidence of compliance for this guiding principle would be a sustainable acquisition plan that includes an agency-, site-, or building-level purchasing plan that includes EPA designated recycled products.

5.9 Recycled Content Requirements

Here is a sample that shows how recycled content is incorporated into various kinds of building insulation. This type of information shows which products will meet the recycled content action within Guiding Principle V and should be used to achieve compliance.

5.10 Biobased Content

The next action is to address biobased content in products.

This action is similar to the recycled content action. This action requires an agency to use USDA-designated products and materials with the highest biobased content level according to the USDA's biobased content guidelines.

For other products, use biobased products made from rapidly renewable resources and certified sustainable wood products. If these designated products meet performance requirements and are available at a reasonable cost, all solicitations and acquisition plans should include a preference for purchasing such products. Areas in which these purchasing preferences would be necessary are building construction, operation, maintenance, and use.

If you cannot purchase biobased content, for whatever reason, make sure to clearly document why.

USDA's biobased product designations and biobased content recommendations are available on USDA's BioPreferred web site. Click the link for more information. <http://www.usda.gov/biopREFERRED>

5.11 Biobased Products – Purchasing Preference Policy

The USDA identifies a wide range of biobased products that are suitable for a purchasing preference policy. These include:

- Products composed of recent biological components
- Agricultural materials
- Forestry materials, and
- Marine materials.

5.12 Biobased Products

Currently, the USDA has 77 product categories that represent over 10,000 products, which is a wide range of products for your building operations. Click on the link for the Recommended Evidence of Compliance.

Recommended Evidence of Compliance.

Ensure that relevant contracts, solicitations, and policy contain specific language for the purchase of USDA-designated biobased products.

5.13 USDA BioPreferred Products

The USDA BioPreferred program includes a logo for products that meet its standards to help you identify and specify products to purchase. The USDA BioPreferred program

- Identifies and seeks to establish new markets for biobased products
- Includes two major program elements:
- Federal Procurement Preference, and
- Voluntary Labeling

5.14 Designated Items - Construction

Here is a sample of construction products and their minimum biobased content, as established by the USDA. Just as the EPA has specifications for recycled content in construction projects, the USDA has the same for biobased products.

Materials are broken down into different categories for various products. These list USDA's minimum biobased content for each product or material. This information will be useful as you select and purchase your products. Click on the link to get additional information about the USDA BioPreferred Program.

<http://www.usda.gov/biopREFERRED>

5.15 Environmentally Preferred Products

Guiding Principle V requires agencies to use products that have a lesser or reduced effect on human health and the environment over their lifecycle, when compared with competing products or services that serve the same purpose.

Standards and eco-labels are available in the marketplace to assist specifiers in making environmentally preferable decisions. Click on the link for more information on the "Federal Green Construction Guide for Specifiers."

www.wbdg.org/design/greenspec.php

5.16 Products with Multiple Attributes

As we go through the various actions required for compliance with Guiding Principle V, some product overlap occurs.

Since 2006 when the Guiding Principles were put into place there are products that have multiple attributes. Here are some examples of products with multiple attributes that can meet different requirements and actions.

5.17 Environmentally Preferable Purchasing Policy (EPP)

As stated, agencies must include environmentally preferable purchasing in their sustainable acquisition plans at the site and building levels. Here is a sample of an Environmentally Preferable Purchasing Policy, or EPP. Click on the link for the Recommended Evidence of Compliance.

Recommended Evidence of Compliance.

Provide an environmentally preferable purchasing policy, or a sustainable acquisition plan at agency, site, or building level. This plan should include environmentally preferable products.

5.18 Integrate EPP in All Purchasing Systems

Because the Guiding Principles require a sustainable acquisition plan or an EPP, it is important to take into account all the various means by which products and services are purchased.

Make certain an up-to-date EPP is circulated to all pertinent staff. Ensure these staff understand that the agency is committed to sustainable acquisition compliance.

You will need to provide documents to prove compliance and comprehension from all purchasing parties. High-level policy may not be sufficient; it is crucial to ensure every staff member responsible for purchases is aware and compliant with the agency's EPP.

It is necessary to document compliance with all types of purchasing vehicles, including purchase cards, purchasing requests, RFPs, and contracts: 95% of all new contracts must specify environmentally preferable products.

NFTF:

Guiding Principle #1 discussed tenant education; this remains a very important factor. Make certain everyone understands they are required to purchase environmentally friendly products, and know why they need to purchase these products.

Click on the link for the Recommended Evidence of Compliance.

Recommended Evidence of Compliance.

Have environmental purchasing policy, which includes environmentally preferable products.

5.19 Acquisition Contracts - Template Language

An agency's EPP should have general language or statements to indicate that all designated products used are compliant with the actions within Guiding Principle V.

Click on the links for sample templates that include specific language and wording to include in purchasing or procurement contracts and documents.

Acquisition

<http://www.fedcenter.gov/programs/buygreen/>

Biobased construction, custodial, food services, grounds, operations, vehicles –
scroll down to "Contract Templates"

<http://www.usda.gov/procurement/programs/biobased/procurementtools.htm>

EPA's Environmentally Preferable Purchasing website

<http://www.epa.gov/epp/>

5.20 Designated Products Tool

The Office of Federal Environmental Executive has developed a Designated Products Tool to help agencies meet Guiding Principle V. This tool displays sustainable products in a variety of categories, including some listed here. This is a very useful reference tool when creating an EPP.

Click on the link to access the web site to learn more about the Designated Products Tool.

http://www.fedcenter.gov/Documents/index.cfm?id=11767&pge_prg_id=20257

5.21 Waste and Materials Management

The next action item for Guiding Principle V is Waste and Materials management. This action item states that buildings must provide re-use and recycling services for building occupants, wherever markets or on-site recycling programs exist. Agencies must provide salvage, re-use, and recycling services for waste generated from:

- Building operations
- Maintenance
- Repair
- Minor renovations
- Discarded furnishings, equipment and property

This could include such things as beverage containers and paper from building occupants, batteries, toner cartridges, outdated computers and electronic office equipment, and construction material from a minor renovation. Most agency facilities and sites already have this in place; the key here is to make sure it is clearly documented.

NFTF:

This action works well in concert with the tenant education action from Guiding Principle I.

5.22 Net Zero Waste

A means to achieve compliance with the Waste and Materials Management Action in Guiding Principle is to create a Net Zero-Waste plan.

An example of a promising Net Zero Waste program is underway at Fort Hood, which requires the site to be net zero waste by 2020. There are a number of federal agencies that are now moving in this direction.

5.23 Salvage, Reuse, & Recycling

To meet compliance with the Waste and Materials Management action, waste reductions must be considered in a holistic manner. Waste reductions will include such actions as material salvage, reuse, and recycling.

An important factor to keep in mind is to know what amounts and types materials are coming into your building, and to consider ways to reduce the amount. Agencies should then convey their waste and material reduction requirements to their suppliers.

Following this process is a good way for agencies to evaluate current practices and determine more sustainable ways to carry out their missions. This is the basis for all the Guiding Principles. Click on the link for the Recommended Evidence of Compliance.

Recommended Evidence of Compliance

Provide relevant documents, contracts, and specifications, which demonstrate an agency is implementing the best salvaging, reuse, and recycling practices possible.

NFTF

Make sure your subcontractors know your agency's recycling plan. It works much better to sort when going in than to sort once it's coming out. Look for opportunities to reduce materials and waste entering the building or site.

5.24 Ozone Depleting Compounds

The final action item in Guiding Principle V covers ozone -depleting compounds. This action requires agencies to eliminate the use of ozone-depleting compounds where alternative, environmentally preferable products are available.

This action should be conducted consistent with the Montreal Protocol, Title VI of the Clean Air Act Amendments of 1990, or equivalent overall air-quality benefits that take into account lifecycle impacts.

Regulations for federal agencies regarding ozone-depleting compounds have been in effects since the 1990s, so compliance with this aspect is easily achieved. Many sites already have policies in place to reduce use of ozone depleting compounds, or have already eliminated their use.

It is possible that agencies with older buildings may have aging equipment that may still contain or emit these compounds. Should this be the case, the agency will need a plan to remove or remediate this equipment.

Click on the link for the Recommended Evidence of Compliance.

Recommended Evidence of Compliance

Document zero use of CFC-based refrigerants in heating, ventilating, air conditioning, and refrigeration in compliance with the *Montreal Protocol* and *Title VI of the Clean Air Act Amendment of 1990*, unless a Third party says it is uneconomically feasible or a phase-out plan is in place.

5.25 Guiding Principle V: Course Summary

This course covered Guiding Principle V, Reduce Environmental Impact of Materials. We covered:

- Recycled Content
- Biobased Content
- Waste and Material Management, and
- Ozone Depleting Compounds.

Thank you for your interest and commitment for Federal Leadership in Existing High Performance and Sustainable Buildings. We hope that you will also take the other e-Trainings in this series on the Guiding Principles.

Now, please take a moment to click on the link at the top of your screen to complete the quiz and short course evaluation. This will provide you with continuing education credits and provide FEMP with valuable feedback to continue to improve training offerings.

End of Guiding Principle Course 5